

From: Separation Science <elearning.solutions@sepscience.com>
Sent: Tuesday, February 26, 2013 1:20 PM
To: Hanchett, James (DPH)
Subject: Thermo Featured GC Application Notes



Featured Application Notes

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Analysis of Benzophenone and 4-Hydroxybenzophenone in Breakfast Cereal

The use of QuEChERS dispersive SPE as a simple, fast, and quantitative sample preparation method for the GC-MS analysis of benzophenone and 4-hydroxybenzophenone in breakfast cereal has been demonstrated. Additionally, the suitability of the Thermo Scientific™ TraceGOLD™ TG-17MS GC column for benzophenones analyses has been shown. The average recoveries for the spiked benzophenone and 4-hydroxybenzophenone in breakfast cereal at 0.6 mg/kg were 101.7% and 82.3%, with relative standard deviations of 2.3% and 4.6% respectively, using the modified QuEChERS method described in EN15662.

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Analysis of 18 Polycyclic Aromatic Hydrocarbons in Soil Using the QuEChERS Method

The use of QuEChERS dispersive SPE as a simple, fast, and quantitative sample preparation method is demonstrated for the GC-MS analysis of 18 polycyclic aromatic hydrocarbons (PAHs) in soil. The suitability of the Thermo Scientific™ TraceGOLD™ TG-17SIMS GC column for the separation of 18 PAHs is also shown. The average recoveries for the spiked 18 PAHs in soil at 1 mg/kg were between 85.0% and 106.7% with relative standard deviations between 0.3% and 2.8% using the original QuEChERS methodology.

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Analysis of Fatty Acid Methyl Esters (FAMES) C8–C24 by FID Using a Metal Column

Fatty acid methyl ester (FAME) analysis is performed for a number of reasons, from measuring the fat content of foods to determining the constituents of biodiesel. Due to the high-throughput nature of many of these tests, improvement in column lifetime and robustness is desirable. Thermo Scientific™ TraceGOLD™ Metal GC columns provide a robust alternative to the traditional fused silica column. Metal columns give equivalent selectivity to a fused silica column for the separation of FAMES.

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The Importance of Autosampler Vial Selection in the GC-MS Analysis of Pyrethroid Pesticides at Low Concentration

The selection of the correct autosampler vial type is vital to the success of analyzing pyrethroid pesticides at low levels. A method for the determination of pyrethroids at 0.10 ng/mL was developed using solid phase extraction (SPE) for pre-concentration with subsequent analysis by GC with PTV simulated on-column injection. Careful selection of the autosampler vial type was needed to minimize adsorption effects.

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Analysis of Petroleum Fractions by ASTM D2887

ASTM method D2887 describes a simulated distillation protocol for the separation of petroleum fractions over the boiling points range of 55.5 to 538 °C. The Thermo Scientific™ TRACE™ TR-SimDist GC column has been shown to achieve this separation in less than 20 minutes.

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Analysis of Low Level Pyrethroid Pesticides in Water

A method for the determination of pyrethroids in water at ultra-low-level concentrations of 0.02 and 0.10 ng/mL was developed using solid-phase extraction (SPE) for pre-concentration and subsequent analysis by GC with PTV injection. Careful selection of the autosampler vial type was needed to minimize adsorption effects.

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Comparison of Thermo Scientific TraceGOLD TG-WaxMT and Thermo Scientific TraceGOLD TG-WaxMS Columns Using a Standard Test Mix

This application note demonstrates the equivalent chromatographic performance of TraceGOLD fused silica and metal Wax phase GC columns using a standard test mix.

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